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CALIFORNIA TRANSPORTATION PLAN 2025



THE VISION

California has a safe, sustainable transportation system that is environmentally sound, socially equitable, economically viable and developed through collaboration; it provides for the mobility and accessibility of people, goods, services and information through an integrated, multimodal network.

September 25, 2002

CALIFORNIA TRANSPORTATION PLAN 2025

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CALIFORNIA TRANSPORTATION PLAN 2025

EXECUTIVE SUMMARY

Over the next two decades, California is expected to add another 11 million new residents, reaching a total population of 45 million by 2020¹. How will state, regional, and local governments and the private sector meet California's growing demand for transportation? The draft **California Transportation Plan 2025** (CTP) explores the social, economic, and technological trends and demographic changes anticipated over the next 20 years and their potential influence on travel behavior. The plan then presents goals, policies, and strategies to address the projected demand for transportation services.

The draft CTP proposes a balanced approach to the projected increase in demand for mobility and accessibility. It seeks to guide transportation investments that benefit our economy, support our communities, and safeguard our environment.

Prior to developing the draft CTP, we asked Californians to share their transportation concerns. The draft CTP reflects the public concerns expressed during an early public participation program, guidance from transportation experts, providers and decision makers, and was refined by a multi-disciplinary policy advisory group. Details of the public participation and outreach efforts are contained in Appendix IV to the draft CTP.

The release of this draft signals the beginning of the public review and comment of the draft CTP. Transportation users, providers, and decision and policy makers will have an opportunity to review and comment on the draft CTP in numerous forums, and through questionnaires, comments cards, and the CTP website. The public's participation and comments will help shape this plan and, most importantly, California's future transportation system.

Long-Term Commitments

The results of the early public participation revealed that we, as Californians, are committed to making this state the best place to live, work, play, and visit. We are proud of our state, but have concerns about our future. We are concerned about our children and our ability to safely access the economic, educational, cultural, and social opportunities we desire, and the services we need. We are concerned about population growth and its

¹ Department of Finance, Demographic Research Unit, County Population Projections with Age, Sex, and Race/Ethnic Detail, December 1998.

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impacts on traffic congestion, the environment, our communities, and our quality of life.

California's leaders and voters have demonstrated their commitment to address these concerns. The CTP builds upon the foundation established over the past several years to improve the state's infrastructure and end decades of disinvestments. The following are examples of California's commitment to the future:

Commitment to Safety and Security

In 1999, Governor Gray Davis signed into law the Safe Routes to School Program, a major pedestrian safety grant program specifically targeted to improve the safety of school children. The funds can be used for bicycle lanes, sidewalks, traffic signs, crosswalks, and traffic calming measures. The first year generated \$130 million in grant applications.

Californians demonstrated their commitment to safety by having the nation's highest rate of seatbelt and child safety seat usage in 2001. The state received the only "A" grade from the National Safety Council and the National SAFE KIDS Campaign for its occupant protection laws.

Commitment to Relieving Traffic Congestion

In July 2000, Governor Gray Davis initiated the Traffic Congestion Relief Program (TCRP). The TCRP, dedicating the state's portion of sales tax on gasoline to transportation for seven years, provides over \$5 billion in new funds for high-priority projects to relieve congestion and improve goods movement, and \$1.4 billion for local streets and road maintenance and transit operations. The TCRP represents the single largest investment in transportation infrastructure improvements in the state's history.

In March 2002, Californians voted two-to-one in favor of Proposition 42 to continue the transportation improvements initiated by the TCRP. Proposition 42 permanently dedicates the state's portion of sales tax on gasoline to transportation improvements and is expected to generate an additional \$35 billion for transportation projects during the first 20 years.

Commitment to Preserving the System

The Governor's commitment to preserve the existing transportation system initiated by the TCRP was continued by the voters with the approval of Proposition 42. The state's cities and counties will receive 20 percent of Proposition 42 resources for maintaining their local streets and roads.

Californians demonstrated their commitment to preserving and maintaining the system by participating in the Adopt-A-Highway Program. 40,000 participants representing 4,700 groups volunteered to pickup trash, plant

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trees and wildflowers, remove graffiti, and maintain traveler information centers at roadside rest areas. In 2001, volunteers picked up nearly 210,000 bags of trash from California's roadsides.

Commitment to the Economy

In 2002, California launched a record \$7 billion in transportation projects, providing approximately 182,000 jobs and nearly \$20 billion in economic stimulus.

The \$2.4 billion Alameda Corridor rail cargo expressway was completed in 2002. The project, linking the Ports of Long Beach and Los Angeles to transcontinental rail yards was developed through a public and private collaboration. The corridor will improve distribution of approximately \$300 billion in trade, relieve congestion, reduce noise and air pollution, and improve safety. However, the trade benefits on the Alameda Corridor cannot be fully realized until capacity on the Alameda Corridor-East to San Bernardino County has been increased. The TCRP provides \$273 million towards safety and signal improvements and grade separations to help relieve congestion and improve operations on this critical trade corridor.

"More than ever, transportation is the critical link between California and economic success in the 21st century. We need to invest money, yes, but we need to do it wisely."

GOVERNOR GRAY DAVIS

Commitment to Communities

In 2001, the California Department of Transportation (Caltrans) adopted a Context Sensitive Solution policy providing for innovative approaches that integrate and balance community, aesthetic, historic, and environmental values with transportation safety, maintenance, and performance goals. The policy promotes creative and collaborative problem-solving to make projects better reflect their surroundings.

During a freeway project to close the gap on Interstate 15 in San Diego, local communities and neighborhoods, Caltrans, and the San Diego Association of Governments collaborated to meet the needs of those people affected by the project. As a result, 11 over-crossings were designed to knit neighborhoods together by providing pedestrian and bicyclist circulation and open space for parks, plazas, bridges, and retail buildings.

Commitment to the Environment

In July 2002, Governor Davis signed landmark legislation to combat global warming, putting California at the forefront of a worldwide effort to reduce greenhouse gases. Assembly Bill 1493 requires the California Air Resources Board to develop carbon pollution (greenhouse gas) standards for vehicles in model year 2009 and beyond. Continued global warming could have

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negative impacts on California's health, environment, communities and economy.

In March 2002, the American Lung Association of Sacramento honored Caltrans with its Clean Air Award for Government for initiating a five-year program to green its fleet. The program is intended to modify the majority of Caltrans' 14,000 vehicles to use cleaner-burning engines and fuels, or convert to electric, hybrid, and solar power.

THE CALIFORNIA TRANSPORTATION PLAN 2025 VISION

California has a safe, sustainable transportation system that is environmentally sound, socially equitable, economically viable and developed through collaboration; it provides for the mobility and accessibility of people, goods, services and information through an integrated, multimodal network.

The CTP provides a vision of sustainability and adopts guiding principles to reach the vision. Overarching these principles is the "system" concept. Transportation policy- and decision-makers cannot view transportation by individual mode. It must be viewed, planned, and operated as an integrated system with complementary modes. Nor can policy- and decision-makers take a narrow geographic approach to transportation. The system must connect effectively between jurisdictions and appear "seamless" to the transportation user.

To develop a seamless, integrated transportation system that offers a high degree of accessibility to California's growing population, the CTP adopts four guiding principles:

- ❑ Collaboration
- ❑ Innovation
- ❑ Leadership
- ❑ Communication.

COLLABORATION is included in both the vision and the guiding principles to emphasize its level of importance. Transportation planning and programming in California is a complex process shared among multiple public and private entities. It requires collaboration among the transportation providers and governmental entities as well as community-based organizations, urban planners, developers, social, community and emergency service providers, the environmental and business communities, permitting agencies, system users, and others. All of these voices must be heard and considered in order to achieve an integrated transportation system that promotes economic vitality and community goals.

While collaboration may take substantial time and effort, it is essential to selecting and completing transportation projects that best meet current and

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future local, regional, and state needs. If meaningful communication is not achieved early during transportation planning and continued through project development, projects could be delayed due to legal action. Reaching consensus early will facilitate timely project completion.

To help ensure community participation, the Governor's Office of Planning and Research (OPR) is sponsoring a series of Vital Community Forums. The Forums are designed to provide participants with the tools they will need to help their community through civic engagement. The Forums bring together state representatives with community leaders, local government officials, and business, industry, educational, nonprofit, and community organization leaders to discuss how they can collaborate to create more vital and economically healthy communities.

There also must be collaboration among policy makers to ensure policy harmonization. For example, if a community or region adopts a policy to relieve roadway congestion by offering convenient and reliable transit, the land-use policies should support transit service.

The draft CTP was developed through consultation with state, regional, and tribal governments, and in collaboration with local officials, community-based organizations, and a multitude of stakeholders. It involved land-use, environmental, transit, highway, bicycle and pedestrian advocates, shippers, the business community, and the public. The objective was to build consensus regarding the transportation vision, principles, goals, and strategies that will guide transportation decisions and investments over the next two decades.

LEADERSHIP means defining the transportation vision, working toward the vision, taking risks to reach the vision, and inspiring and encouraging others to embrace the vision.

INNOVATION is the creativity, ability, and flexibility to develop, test, and implement new solutions.

COMMUNICATION is the exchange of information and ideas. Communication involves both expressing and receiving ideas and information, and striving to understand and relate to the concerns of others.

Providing Mobility and Accessibility

The transportation vision includes the concepts of mobility and accessibility. It is important to understand mobility and accessibility, and their relationship

"We must foster policies and initiatives that make the infrastructure building blocks work together. The new millennium home, for example, must be affordable, energy-efficient, technology-enabled, and close to mass transportation. Our thinking must be as integrated as our lives."

MARIA CONTRERAS-SWEET, Secretary
Business, Transportation and
Housing Agency

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to transportation, in order to understand the goals, policies and strategies outlined in the CTP.

MOBILITY is the potential for movement. It is affected by the cost of transportation and the transportation system available. It is also affected by personal limitations, both financial and physical. As the cost of transportation increases, mobility decreases. In addition, if one's options are limited due to physical disability, mobility decreases. However, movement is generally not an end in itself, but a means to access services, activities, and markets.

ACCESSIBILITY is measured by the time and ease with which destinations can be reached. One may access a destination by actual movement or by "virtual" movement using communication systems such as the Internet, telephone, video, or teleconference systems. Accessibility is affected by distance, connectivity, congestion, transportation and communication options, and physical capabilities. Thus, it incorporates the characteristics of mobility, plus the factors of time and ease.

Accessibility may be influenced by many factors, including urban form and street design. For example, the traditional grid street pattern has numerous options for getting from point A to point B. However, late 20th Century residential developments often include circuitous street patterns with cul-de-sacs, may be surrounded by walls, and often have limited entry points. Thus, while movement or mobility is still possible, the new development pattern reduces accessibility because it limits options, decreases ease, and likely adds time to get from one point to another.

Accessibility is of utmost importance to the economy. Businesses, as well as consumers and the labor force, rely on quick access to airports, seaports, rail lines, and major highways. If access to destinations and markets is not reliable, firms may choose to go elsewhere.

Transportation system performance can be measured by the mobility and accessibility it provides the user. The CTP proposes goals, policies, and strategies to enhance California's accessibility over the next two decades. It builds on current activities and policies and proposes new approaches to make the system safer and more efficient, and to provide more transportation choices.

THE SYSTEM

To many, transportation means the roadway system, but it is much more. It is also transit, bicycle, pedestrian, maintenance and communication facilities, railways, air, sea and space-ports, pipelines, and the public and privately owned vehicles that use them. Californians use the transportation system each day to access employment, education, shops, medical services, and to participate in social and recreational opportunities. Our transportation

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system is the network that connects our local, state and national economies, and allows us to efficiently move people, goods, and information from place to place.

TRENDS

California is the most populous state in the nation and is expected to increase by 33 percent in the first two decades of the 21st century. The state's population is also the most ethnically diverse. While the state's growth and diversity adds to California's economic strength and vibrancy, it also confronts policy-makers with a multitude of social, economic, environmental, and transportation challenges. Transportation is an integral part of the social and economic fabric of California. It cannot be examined without considering population growth and demographics, changing travel behavior, safety, employment, housing, land-use, the economy, technology, the environment, community values, individual opportunity, and funding. The CTP explores the impact of projected trends and demographics on transportation.

Transportation influences the shape of our communities. In the 20th Century, urbanization has been accompanied by increasing decentralization within cities (or urban sprawl). This decentralization is supported by a series of transportation innovations, streetcars, automobiles, subways, and urban and commuter rail services that make longer daily trips possible.

As employment centers moved from the central city to the suburbs and edge cities in the late 20th Century, jobs became less accessible to inner-city residents, especially the urban poor. The problem is made more complex by the fact that relatively few suburban jobs are well served by public transit, and many urban residents are without cars. The CTP explores the changes in urban form and their impacts on travel behavior, transportation demand, and the environment.

California is the fifth-largest economy in the world. Our economic status is dependent upon the accessibility of people and goods within the state, as well as to other states and countries. California's Pacific Rim and North America Free Trade Agreement location are an economic blessing, and a security and traffic challenge. The CTP explores options for meeting the projected increase in demand for goods movement.

Adequate and flexible funding is one of the greatest challenges in providing a transportation system that offers a high degree of accessibility to all Californians and the efficient movement of goods. The primary source of transportation revenue is the excise tax collected on each gallon of gas. Its value is steadily diminishing because this tax has not kept pace with inflation. The estimated additional \$1.4 billion to be made available annually by the Governor's TCRP and the voter's approval of Proposition 42 will help reverse decades of disinvestments. However, it will not entirely bridge the

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gap between future transportation demand and revenue. The CTP offers strategies for maximizing existing resources and securing more flexible additional transportation revenue.

GOALS

The following goals were developed based on based on consultation with numerous public and private transportation providers and concerns expressed by Californians during the early public outreach effort. The goals, while identified and discussed as separate issues, are interdependent. (For example, if the system is not well maintained, the level of mobility will decline.)

Each of the following goals support one or more concepts contained in the vision for California's transportation system:

- Goal 1. ENHANCE PUBLIC SAFETY AND SECURITY** - Ensuring the safety and security of people, goods, information, and services in all modes of transportation. Integrating new technologies when designing system infrastructure and developing coordinated security and response plans.
- Goal 2. PRESERVE THE TRANSPORTATION SYSTEM** - Maintaining and rehabilitating California's extensive transportation system to preserve it for future generations.
- Goal 3. IMPROVE MOBILITY AND ACCESSIBILITY** - Expanding the system and enhancing modal choices and connectivity to meet the state's future transportation demands.
- Goal 4. MAXIMIZE EFFICIENT USE OF RESOURCES** - Planning and providing transportation services while protecting our environment and historical and cultural assets. Maximizing the efficient use of resources including land and energy consumption.
- Goal 5. REFLECT COMMUNITY AND ENVIRONMENTAL VALUES** - Finding transportation solutions that balance and integrate community, aesthetic, and environmental values with transportation safety and performance.

TRANSPORTATION POLICIES

The following seven policies are developed to support the Goals identified above and to respond to concerns expressed by the public and stakeholders, while being mindful of future trends and challenges. The policies may support more than one goal.

- Policy 1.** Expand opportunities for early and ongoing collaboration during the planning and decision-making processes.

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- Policy 2.** Maintain, manage, and preserve a safe and secure transportation system.
- Policy 3.** Develop, manage, and operate an efficient, inter-connected, and intermodal transportation system.
- Policy 4.** Manage growth and conserve resources.
- Policy 5.** Enhance capacity and provide viable transportation choices.
- Policy 6.** Provide additional and more flexible transportation financing.
- Policy 7.** Support research to advance mobility and accessibility.

The policies are designed to preserve the transportation system and provide mobility and accessibility for California's growing population while enhancing the environment, economy, and social equity of California. The CTP offers a number of implementing strategies designed to realize California's transportation vision and goals.

RURAL ISSUES

Rural issues, while as acute as those in urban areas, have very different characteristics. With only eight percent of California's population, rural areas comprise 94 percent of the land area. Providing transportation services to a sparsely and widely distributed population presents special transportation challenges that must be considered when planning for a balanced, interconnected system. California's economy relies on rural agricultural products, timber, and tourism, and consequently, the rural and interregional road system.

Rural transportation issues vary depending on the area's economic base, topography, or proximity to urban areas and tourist destinations. If located adjacent to an urban area, the rural jurisdiction might receive a "spill over" of big city problems, such as traffic and air pollution, but not receive sufficient resources needed to address those issues. The CTP explores some of the issues facing rural transportation providers and offers policies and strategies to address them.

PERFORMANCE MEASURES

Performance measures serve to indicate progress toward identified goals; to inform decision-making on transportation issues and opportunities; to provide a point of departure for policy and program analysis; to evaluate system conditions and strategies; to enable monitoring and problem identification; and to contribute to the integration of economic, social, and environmental factors during the planning and early decision-making processes.

Performance measures consist of a set of objective, measurable criteria used to evaluate the performance of the transportation system and to gauge if and

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to what degree our vision and goals are being achieved. Transportation planners and providers must make sure they are using the appropriate performance measures and that the data is reliable. For example, past transportation efficiency may have been measured by the number of vehicles flowing through the system. This assumed that increased vehicle throughput was the desired outcome. However, if enhanced mobility and accessibility is the objective, measuring the accessibility of people, goods, and services makes more sense.

CALIFORNIA TRANSPORTATION ACTION PLAN DEVELOPMENT

Upon approval of the CTP, Caltrans will initiate development of an Action Plan that will present specific steps to implement the strategies proposed in this document. Building on our mutual commitments and capitalizing on our successes, the Action Plan will identify measurable objectives, roles and responsibilities, timelines, estimated costs, and targeted outcomes. Caltrans will also develop a method to monitor progress toward the goals, and a reporting system and schedule.

The CTP is a plan for all of California. Developing and implementing the Action Plan will require considerable coordination and collaboration with regional transportation planning agencies, local and regional officials, other governmental entities, tribal governments, business, communities, and system users. The participants in this effort will vary depending on the strategy being addressed.

Objectives and priorities may vary based on regional goals. It will be the state's responsibility to help sort through these varying goals and ensure that interregional state transportation goals are addressed and cross-jurisdictional issues are considered.

Work has already begun on developing the Action Plan. Preliminary research and identification of stakeholders is currently underway. It is anticipated that the Action Plan will be completed within one year of the Governor's approval of the CTP.

CALIFORNIA TRANSPORTATION PLAN 2025

INTRODUCTION

Transportation benefits us all. We are all dependent on transportation to access goods, services, and activities. It is so much a part of our daily lives that we may take it for granted. However, when the system ceases to serve us, perhaps due to a natural disaster or terrorist activity, we become fully aware of the vital role it plays.

To many, transportation means the roadway system, but it is much more. It is also transit, bicycle and pedestrian facilities, railways, air, sea and space-ports, pipelines, vehicles, and communication facilities. It is a complex network that serves many purposes, from getting our kids to school to moving our goods to market.

"People can't work if they can't get to work. If we are to keep our economy moving forward, we must find faster, more efficient ways to connect goods, services, and – most important of all – people."

GOVERNOR GRAY DAVIS
2000 State of the State Address

Transportation influences the shape of our communities. When our primary mode of transportation was walking, our communities were very compact. As transportation evolved to horse, river, canal, and rail modes, our communities expanded. With the advent of automobiles and air travel, we were allowed even greater freedom and independence and our communities developed accordingly. The continuing evolution of our transportation system will influence our communities and activities in the future.

The transportation system of the future must provide people with options in going from place to place. People should be able to choose to commute by foot, bicycle, or public transit, as well as by auto. Statewide transportation routes must provide access for people and goods to all areas of the state, nation, and the world. The system must be interconnected, allowing travelers and goods to transfer easily between transportation modes.

The system must be efficient, safe, reliable, and affordable. It must enhance California's communities, and preserve and protect our resources and natural environment.

Just as business makes itself less vulnerable and more responsive to market demand by having a variety of suppliers, California's mobility must rely on a variety of transportation options and strategies. This plan provides goals, policies, and strategies to achieve a balanced transportation system, leading to increased mobility and accessibility, while preserving the system and improving safety.

PURPOSE OF THE CALIFORNIA TRANSPORTATION PLAN

The CTP provides long-range strategies to improve safety, mobility, and accessibility. It is a policy plan designed to guide transportation investments and decisions at all levels of government and the private sector. It is consistent with and supports the findings of the California Commission on Building for the 21st Century's report *Invest for California, Strategic Planning for California's Future Prosperity and Quality of Life*, the Speaker's Commission on Regionalism's report *New California Dream, Regional Solutions for 21st Century Challenges*, and the *Global Gateways Development Program* developed by the Business, Transportation and Housing Agency and Caltrans in partnership with goods movement industry representatives and stakeholders.

This document provides a vision for California's transportation system and explores major trends that will likely influence travel behavior and transportation decisions over the next 20-plus years. In the context of these future trends and challenges, it then provides goals, policies, and strategies to reach the vision.

Following the Governor's approval of the CTP, Caltrans – in collaboration with regional transportation planning agencies, other state agencies, community-based organizations, and other stakeholders – will develop a California Transportation Action Plan. The Action Plan will provide specific steps to implement and measure progress toward the vision and goals outlined in this document. It will capitalize on our previous successes and build on our collective commitments to safety and security, the economy, our communities, the environment, and our commitment to relieving traffic congestion and preserving the existing transportation system.

Developing a statewide long-term transportation plan is an ongoing effort. The last California Transportation Plan was developed in 1993, and updated in 1998 by the "Statewide Goods Movement Strategy," the "Transportation System Performance Measures Report" and the "Study of the Role of the State in Mass Transportation." The CTP 2025 incorporates strategies contained in the 1993 CTP and the 1998 updates, as appropriate.

The CTP has been developed in consultation with the state's 43 Regional Transportation Planning Agencies (RTPA) and will inform the regional transportation plans. State law and the California Transportation Commission (CTC) requires the metropolitan regional planning agencies to adopt a 20-year transportation plan every three years, and every four years for rural agencies (see Appendix X).

Additionally, the CTP considers the findings and recommendations of numerous other focused transportation plans such as the California Aviation System Plan, Interregional Transportation Strategic Plan, Strategic

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Deployment Plans, California State Rail Plan, High Speed Rail Plan, Amtrak's California Passenger Rail System 20-Year Improvement Plan, and State Highway Operation and Protection Plan.

VISION FOR CALIFORNIA'S TRANSPORTATION SYSTEM

California faces many challenges and opportunities, including protecting our sensitive agricultural lands and natural environment while preserving our economic prosperity, and providing opportunities and a desirable quality of life for our rapidly growing population. Decisions must be made today to responsibly meet the transportation demands of the future.

Developing a universally accepted vision for a transportation system in a state as large and diverse as California is difficult. To accomplish this task, Caltrans, on behalf of the Secretary of Business, Transportation and Housing Agency, initiated a multi-faceted, statewide public participation program to gain input from our customers, partners, and stakeholders regarding the state's current and future transportation system. Included in this statewide outreach effort was a two-part customer survey, including 54 focus groups and resulting in 3,200 completed telephone surveys, 24 workshops, comment cards, a brochure and questionnaire distributed in four languages, and a CTP website. Appendix IV provides a detailed description of this effort and a summary of the comments and concerns received.

On a broad view, the public's comments and concerns are incorporated in the following vision for California's transportation system in 2025:

California has a safe, sustainable transportation system that is environmentally sound, socially equitable, economically viable, and developed through collaboration; it provides for the mobility and accessibility of people, goods, services, and information through an integrated, multimodal network.

Key concepts should be defined for the vision to be fully understood.

SUSTAINABLE means meeting the needs of the present without compromising the ability of future generations to meet their own needs. When applied to transportation, it means ensuring that environmental, social, and economic considerations are factored into decisions affecting transportation activity.²

A **TRANSPORTATION SYSTEM** is effectively inter-connected among jurisdictions and modes. It is comprised of many publicly and privately owned and operated transportation modes and supporting facilities designed to move people, goods, services, and information. Transportation facilities and modes include transit, bicycle, pedestrian, air, sea and space-ports, ferries, pipelines, railways, roadways, and vehicles. The transportation system is

² Moving on Sustainable Transportation (MOST), Transport Canada, 1999.

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integrally tied to the shape and vitality of California's society and reflects community values.

ENVIRONMENTALLY SOUND means that the transportation system is part of an enhanced, ecologically healthy environment, and is developed with appropriate safeguards to protect open space, agricultural and sensitive lands, critical habitats, wildlife, water and air quality, and to minimize noise and visual impacts.

SOCIAL EQUITY in transportation system has two components. The first is to ensure that no group of people receives disproportionate burdens or benefits from transportation investment decisions. The second is that low-income individuals, the young and elderly, people with disabilities, and other disadvantaged individuals in rural and urban areas have access to safe and reliable transportation.

ECONOMICALLY VIABLE means transportation decisions are made based on an analysis of the total benefits and long-term costs of transportation, including life cycle, environmental, social and economic costs, and their immediate and cumulative impacts and efficiencies. Benefits include the improvements of the state's mobility and regional economic vitality, development and land-use objectives, and the environment. Additionally, the cost of maintaining, managing, and operating the existing system is considered before improving or expanding the system.

COLLABORATION is included in both the vision and the guiding principles to emphasize its level of importance. Transportation planning and programming in California is a complex process shared among multiple public and private entities. It requires collaboration among transportation providers and governmental entities as well as community-based organizations, urban planners, developers, social, community and emergency service providers, the environmental and business communities, permitting agencies, system users, and others. All of these voices must be heard and considered in order to achieve an integrated transportation system that promotes economic vitality and community goals.

MOBILITY is the ability to move people, goods, information, and services. Increasing mobility may be accomplished by increasing capacity, improving system connectivity, management, and operations. It can also be improved by effectively using all travel modes including privately and publicly owned vehicles, air and ferry services, bicycling, and walking.

ACCESSIBILITY is the ability of people to reach other people, goods, services, activities, destinations, and information. Access can be achieved by expanding the capacity, efficiency, and convenience of the transportation system. It can also be achieved by alternate methods, such as telecommuting, electronic business, and government transactions and through land-use changes that reduce the distances between residences, employment, services, and points of entry to the transportation system.

TRENDS AND CHALLENGES

The first step in determining how to reach the vision for California's transportation system is an assessment and identification of the current and projected future trends and challenges under which the Plan's goals, policies, and strategies will be implemented.

Transportation is part of the social and economic fabric of California. It cannot be considered apart from population growth, changing demographics, and travel behavior, safety, employment, housing, land-use, the economy, technology, the environment, community values, individual opportunity, and funding. Many current trends, if continued, give rise to concerns regarding California's future in terms of environmental quality, economic prosperity, equity of individual opportunity, and society's ability to provide adequate services.

California is the most populous state in the nation, and its population and natural environment is the most diverse. While the state's growth and diversity adds to California's economic strength and vibrancy, it also confronts policy-makers with a magnitude of social, economic, environmental, and transportation challenges. The following is an overview of trends expected to influence future transportation decisions and travel behavior.

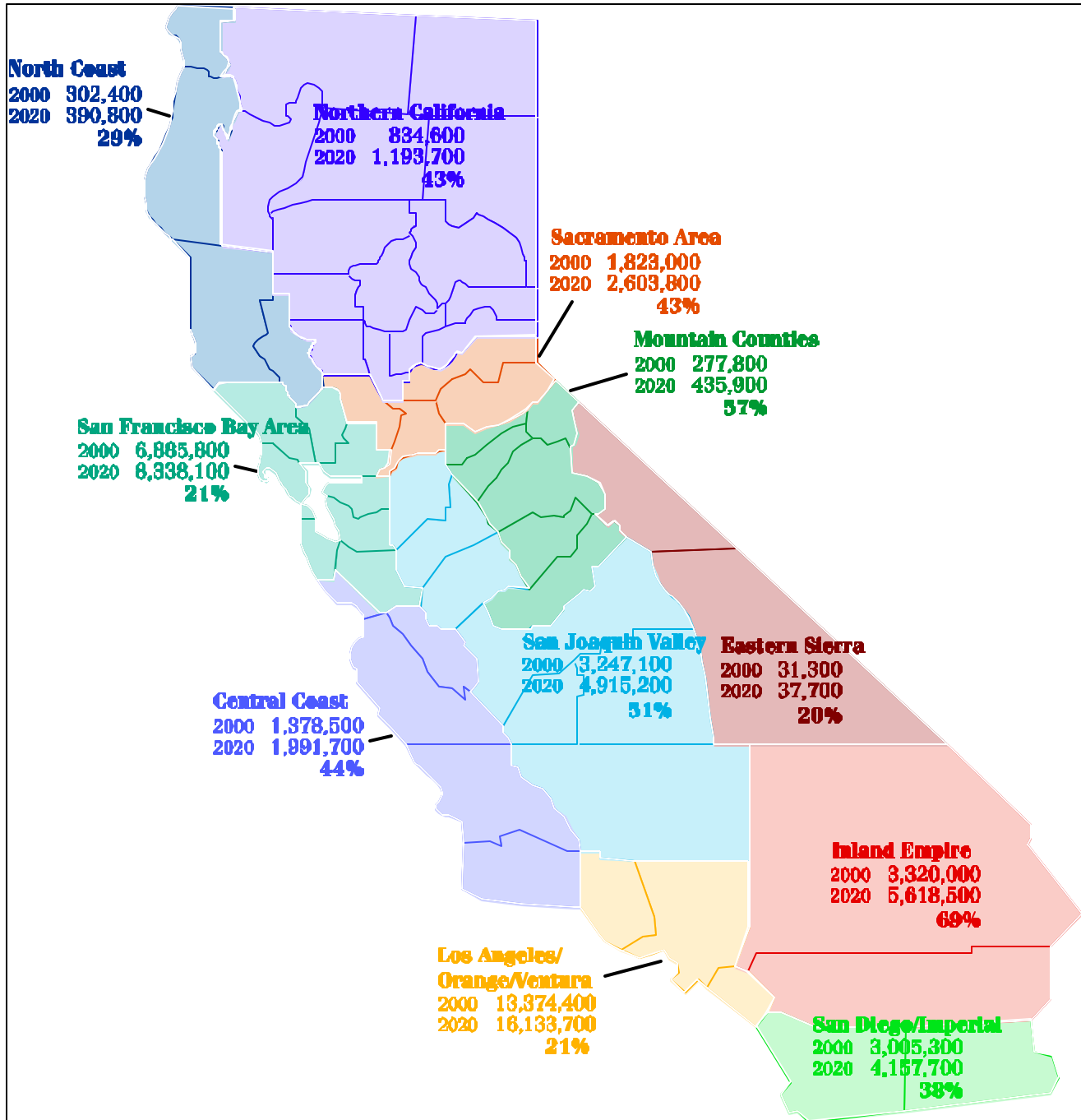
Population: The Department of Finance projects the state's population will increase by approximately 11 million during the first two decades of the 21st Century, to 45 million. While international migration will continue to contribute to the state's growth, the largest source will be from Californians bearing children.³ The 2000 census revealed that for the first time since the Gold Rush, the majority of Californians were born in the state. Continued internal growth requires a transportation system that provides for Californians who are likely to remain in the state throughout their lives.

FIGURE 1 on the following page shows California's projected regional population in actual numbers and rate of growth. The Los Angeles Basin and the Inland Empire (San Bernardino and Riverside Counties) are expected to experience the most population growth. The San Francisco Bay Area will also likely face considerable growth. These regions are already experiencing substantial demands on their infrastructure and have limited developable land.

³ Elizabeth Deakin and John Thomas, Trends and Projections for Consideration in California's Transportation Plan, UC Berkeley Transportation Center, May 2001, p. 2-3.

FIGURE 1

Regional Population (2000 Census)
Regional Projected 2020 Population
Regional Rate of Growth



The San Joaquin Valley is also projected to experience a high rate of growth. Much of the growth in the northern and southern parts of the San Joaquin Valley can be attributed to the lack of affordable housing in the Los Angeles Basin and the San Francisco Bay Area. Kern, San Joaquin, and Stanislaus Counties provide housing for workers in adjacent metropolitan area's employment centers. Due to the Central Valley's attractive supply of affordable land, it will likely continue to experience loss of prime agricultural land, lengthening commutes, increasing transportation demand, and the potential for further degradation in air quality.

Demographic Changes: While California's general population is expected to increase nearly 33 percent by 2020, the senior age group is projected to increase about 71 percent. Projections indicate in 2020, there will be about 2.6 million more Californians over the age of 65 than there are today. This generation of older drivers has spent their entire adult lives traveling by automobile. They will likely be reluctant to give up the freedom of driving in spite of declining vision and physical capacity.

The over-85 age group will increase by 62 percent. Licensed drivers 85 years and older increased substantially from 1969 to 1995 – men from about 48 percent to 72 percent, and women from 12 percent to 29 percent.⁴ Decision-makers will need to consider the safety implications in designing and providing transportation for elderly, but mobile, Californians.

According to Department of Finance projections, in 2020 there will be about 13.7 million Californians under the age of 20, or about three million more than in 2000. According to California Highway Patrol's *Annual Report of Fatal and Injury Motor Vehicles Traffic Collisions*, children under the age of 15 accounted for nearly 30 percent of the 15,200 pedestrian victims in 2000. California's youth will need safer options to access school, cultural, and recreational opportunities.

SAFE ROUTES TO SCHOOL

Under legislation signed by Governor Davis in 1999, \$50 million in federal and matching local transportation funds was made available for the Safe Routes to School Program. In 2001, the program was extended through December 31, 2004. The funds are used for safety projects including traffic signals and signs, sidewalks, crosswalks and bike lanes, and traffic calming and speed reduction projects. The Program is undertaken in collaboration with Caltrans, California Highway Patrol, local school-based associations and school officials.

In 2000, based on adjusted local housing costs, the adjusted poverty rate in California was about 15 percent, compared to 10.6 percent in the rest of the nation. Those living at or below the poverty level often fulfill service and agricultural positions and are key to California's prosperity. They are located throughout the state and span all races and ethnicities.⁵

⁴ Ibid. pg. 3-2.

⁵ Abel Valenzuela, "Transportation Issues in Low-Income and Immigrant Communities," California Futures Conference, June 21 and 22, 2001, Los Angeles.

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Currently, one of every four Californians was born in another country, a higher proportion than any other state.⁶ Population estimates indicate that no race or ethnic group currently comprises a majority of the state's population. It is expected that the percentage of Latinos, Asians, and Pacific Islanders will increase over the next 20 years, while the percentage of non-Latino Whites and African-Americans will decrease.

Change in Travel Behavior: The focus of transportation congestion has traditionally been accessibility to employment sites. In recent years, however, the number of non-work trips has overtaken the number of commuting trips (see **FIGURE 2** below). This has led to increased use of road networks for non-work trips, thus increasing congestion during off peak periods. Non-work trips do not cluster around peak periods of the day and are not geographically predictable. Because of the unpredictable nature of non-work trips, privately owned vehicles best serve them.

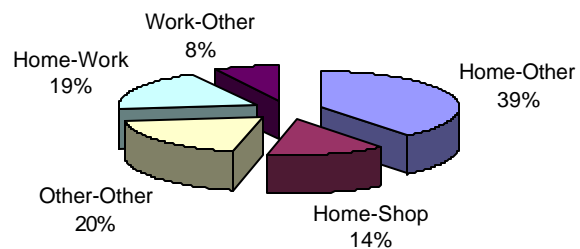
There are a number of potential causes for the increase in non-work trips, including the rise of consumer culture resulting in increasing shopping, entertainment, and recreational trips; changing ethnic and demographic lifestyle characteristics and choices; changing family structure; an increasing number of multi-income, multi-vehicle households; increasing household income; and changing urban form and community design.

Recent immigrants rely on a wide range of alternative transportation modes, including casual shared transportation, unregulated jitney services (small buses with flexible routes and schedules), and bicycles. In Los Angeles, those relying on bicycles are often night workers who need to access work after normal bus service hours. However, bicycle commuting in Los Angeles has proved dangerous, as adult bicycle fatalities doubled between 1998 and 1999.⁷

Californians born in other countries form a disproportionate share of transit riders. However, after ten years of residence, immigrants' travel behavior

Figure 2

California 2000-01 Weekday Trip Type Distribution



Source: California Department of Transportation
2000-2001 Statewide Household Travel Survey

⁶ Deborah Reed and Richard Van Sweringen, Poverty in California, Public Policy Institute of California, November 2001.

⁷ Valenzuela.

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reflects the higher automobile use of the native-born population.⁸ Since the majority of the projected population increase will be internal rather than immigrant, California could see a decrease in transit ridership and an increase in automobile travel among this demographic group.

The University of California, Berkeley and Los Angeles, have undertaken studies to further explore the implications of California's demographic changes on travel behavior and transportation planning. Appendix VII has additional information on the California Transportation Trends and Demographics Study.

Transportation Safety and Security: Although traffic fatality and injury rates have decreased since Congress passed the National Safety Act in 1966, transportation safety is still a major concern of system providers and users. In California, the death rate decreased from 5.0 fatalities per 100 million vehicle miles traveled in 1967 to 1.2 in 2000. This can largely be credited to safety belt usage, aggressive traffic safety programs, and improved vehicle and facility design. The reduced rate has resulted in a cost savings to California and its citizens of up to \$1.8 billion.⁹

In spite of the substantial reductions, during 2000 California had 511,248 reported traffic collisions, resulting in 3,730 fatalities and 303,023 injuries. Thirty-two percent of the fatal crashes involved alcohol, and speed was identified as the primary collision factor in 11 percent of the fatalities. Of the licensed drivers in California, 22 percent were under 20 years of age; however, drivers under 30 years of age comprised 35 percent of all drivers in fatal and injury collisions.

Included in the total, were nearly 700 fatalities and 15,000 injuries among pedestrians, and 116 fatalities and nearly 8,000 injuries among bicyclists resulting from traffic incidents. Of these, children under the age of 15 accounted for nearly 30 percent of pedestrian and 27 percent of bicycle victims (killed and injured).¹⁰

Safety issues affect public transit as well. In 1999, there were 4,212 transit-related collisions, resulting in 72 fatalities and 3,644 injuries reported in California. Also reported were 1,028 transit-related violent crimes, of which 45 percent were committed at a transit station or bus stop, 45 percent in a transit vehicle, and the remaining 10 percent elsewhere in a transit facility. Approximately 5,000 property crimes were reported at transit facilities, nearly 13 percent of which were vehicle thefts.¹¹ California will be challenged to reduce transportation-related fatalities, injuries, and

⁸ Elizabeth Deakin and Christopher Ferrell, Trends and Projections for Consideration in California's Transportation Plan, May 2001, p. 3-19.

⁹ California Office of Traffic Safety.

¹⁰ Annual Report of Fatal and Injury Motor Vehicle Traffic Collisions, California Highway Patrol.

¹¹ 2000 National Transit Database for California. Numbers exclude Amtrak-operated intercity and long-distance passenger rail service.

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property costs in all modes considering the projected increases in population, vehicle miles traveled, and transportation demand.

Unlike other parts of the world, the United States has not been subject to ongoing terrorist campaigns. However, the events of September 11, 2001, the 1995 derailment of a passenger train in Arizona by a group calling itself "Sons of the Gestapo," and the World Trade Center and the Oklahoma City federal building bombings in 1993 confirm that the terrorist threat in the United States is real, although the nature and magnitude of the threat is uncertain.

Because of the state's Pacific Rim location, California can be seen as being especially vulnerable. California is favored with numerous surface, sea, and air gateways crucial to state and national economic vitality. Securing our borders and global gateways without stifling the movement of people and goods will continue to challenge the public and private sectors. Security plans and measures will need to be flexible, responsive for each mode and location, preventive, and include mitigation measures to minimize casualties, environmental impacts, and disruption.

Economy: Transportation investments have a direct and immediate impact on the economy. Based on estimates developed by the U.S. Department of Commerce for California, a \$1 billion investment in highway and transit improvements would directly and indirectly provide over 26,000 jobs, generating about \$870 million in personal income, and almost \$2 billion net increase in the Gross State Product. The full realization in the economic impacts of transportation investments may take up to a decade, with the majority of impacts occurring in the first three to five years of the expenditure.

California's status as the world's fifth largest economy is connected to our ability to transport people and goods within the state, as well as to other states and countries. California is the nation's leading global gateway for Pacific Rim trade. It is estimated that 37 percent of the value of all U.S. and foreign trade (an amount over \$200 billion) passes through California's ports. More than one million jobs are tied to these ports.

Since the North American Free Trade Agreement (NAFTA) was ratified in 1993, California's exports to Mexico have grown 192 percent; reaching \$19 billion in 2000, a record for California exports to any country. The estimated total annual value of trade at the California-Mexico ports of entry exceeds \$29 billion. Although considerable state and federal resources have been devoted to improving the border crossing, California's border with Mexico is experiencing severe congestion from NAFTA-related goods movement, and automobile and truck border crossings are expected to double in the next 20 years.¹²

¹² Global Gateway Development Program, Department of Transportation, January 2002.

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Air cargo is the fastest growing segment of freight transportation. According to the U.S. Customs Service, \$173 billion in air cargo moved through California's airports in 2000. Air cargo demand is expected to increase at an annual rate of about 6 percent through 2020.¹³

The second fastest growing segment of freight transportation is rail. Railroads carried approximately 55.2 million tons of freight traffic on California's 6,300 miles of rail tracks during 1999. As demand increases over the next two decades, railroads will face capacity, environmental, emergency access, safety, and other community-related problems.

The volume of truck transport is enormous and is expected to continue to grow, but at a slower rate than air and rail transport. In 1998, 1.1 billion tons of manufactured freight was transported into and out of California by truck, and one out of every 12 workers was employed in trucking-related occupations. Highway congestion is not the sole issue. Routes providing access to rural areas (such as California's North Coast), older interchanges, local roadways, and truck parking facilities have not kept pace with the needs of the trucking industry.

In goods movement, time is money. Products and services are only as good as their timely and reliable delivery. California will need to improve access to ports and airports and ensure the safety and security of ports of entry and cargo moving through the state. Failure to invest in the system could result in the state's economic decline, rising unemployment, environmental degradation, and the loss of our quality of life.

Employment: As employment centers moved from the central city to the suburbs and edge cities in the late 20th Century, making jobs accessible to inner-city residents, especially the urban poor became an important concern. The problem is made more complex by the fact that relatively few suburban jobs are well served by public transit, and many inner urban residents are without cars.

It is expected that employment centers will continue to be in suburban centers and office parks and that employment growth will continue to be heavily concentrated in Southern California and the San Francisco Bay Area. These areas are already experiencing considerable traffic congestion. Transportation providers and employers will need to explore new forms of transit or telecommuting to provide alternatives to the single occupancy vehicle.

Housing - Employment Mismatch: Currently, affordable housing supplies in the San Francisco Bay Area, Los Angeles Basin, and Orange County employment centers are not keeping pace with employment growth. This has resulted in long commutes and congestion on corridors linking affordable housing in the Central Valley and Inland Empire with employment centers.

¹³ Airports International Magazine, March 2001 (online: <http://www.californiaaviation.org>)

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Among recent homebuyers in California metropolitan areas, the median commute time increased about five minutes between 1985 and 1995. However, among first-time homebuyers, those most affected by rising house prices, the median commute times increased 11 minutes during the same time period.¹⁴

Nearly 10 percent of Californians commute more than one hour to reach their place of work, which is 2.5 percent higher than the national average. If the housing – employment mismatch continues, Californians will experience increasing transportation costs in the form of longer commutes, increased vehicle maintenance, fuel and insurance costs, and degradation of air quality. The public sector will incur additional maintenance and rehabilitation costs and the cost of increasing system capacity.

Land-use Impacts on Transportation: The way communities are planned and designed has a profound impact on our travel behavior. Over the past several decades, three predominant land-use practices have influenced urban design:

- ❑ Cities and counties making local land-use decisions, with regional agencies and the state making regional and interregional transportation decisions.
- ❑ Single-use zoning ordinances isolating employment, shopping and services, and housing locations.
- ❑ Low-density growth planning resulting in considerable land consumption and sprawl-type urban form, requiring higher infrastructure investments due to distances served.

These practices have often resulted in increased traffic congestion and commute times, air pollution, greater reliance on fossil fuels, loss of habitat and open spaces, inequitable distribution of economic resources, and loss of a sense of community. The land-use practices have contributed to the increase in vehicle miles traveled and vehicular non-work trips. Existing community designs often do not include safe bicycle and pedestrian facilities, or destinations are too great in distance to be practicably accessed by walking or biking. Additionally, suburban street designs and low-density housing make communities difficult to serve effectively with transit.

A major influence on community form over the past 20 years is a phenomenon often called “the fiscalization of land use.” This means a policy environment in which land-use decisions are made mostly or entirely based on fiscal considerations, rather than the health, quality of life, and balance of communities. The roots of this phenomenon can be found in the unintended consequences of Proposition 13 of 1978 and other “tax revolt” initiatives.

¹⁴ Raising the Roof: California Housing Development Projections and Constraints, 1997-2020, Department of Housing and Community Development, May 2000.

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The results of fiscalization of land-use decisions include: 1) many local governments rejecting affordable housing projects because they cost more in fire, police, and other services than they produce in tax revenues; 2) communities that do accept housing balance their budgets by imposing large up-front development fees, which increases the cost of new housing; and 3) cities and counties competing for retail developments that generate sales-tax revenue, resulting in competitive “big-box” strip mall and auto mall development, rather than housing.

All of these factors have contributed to the lack of affordable housing, low-density development, and longer commutes to job centers. The competitive retail development environment has resulted in abandoned city centers and derelict shopping malls in older suburban communities.

To maximize resources and minimize impacts on the state’s natural environment, land-use decisions and transportation must be more closely linked in the future. California’s 58 counties and 476 cities will need to collaborate on a regional basis to plan, manage, and operate infrastructure to maximize resources and sustain their economy, environment, and quality of life.

Technology: Transportation services, vehicles, and infrastructure are rapidly being changed by new technologies. Technology applications include electronic payment of transit fares, tolls and parking; on-board diagnostics, information and control systems that can assist the driver in maneuvering the vehicle and avoiding collisions; personal- and vehicle-based “mayday” systems; smart infrastructure that monitors real-time usage and conditions to increase system efficiency; monitoring systems to enhance public transit and airport security; and logistics systems that route, monitor, and track shipments.

Technological changes will also influence the transportation fuels we use. For example, electric, hydrogen, or hybrid electric-petroleum vehicles are being introduced, substantially reducing emissions and changing fleet fuel characteristics.

Advances in computer and communications technology will also influence how Californians work, educate, shop, and do business. Telecommuting, teleshopping, and videoconferencing could reduce the need to travel, and have a profound impact on where Californians choose to live and work.

Technology presents unique challenges. Short life cycles require flexibility and compressed timelines that are uncommon in transportation decision-making. Technologies must also be standardized and integrated statewide so that transportation services are seamless. Consumer devices, such as vehicle-based navigation systems, must work effectively everywhere to achieve market penetration levels needed for low-cost mass production.

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The range of options and their impacts will continue to expand and may alter transportation systems in many ways as additional technologies are introduced. Whether and to what extent these technologies become a significant element of the transportation system will depend not only on the technological developments but also on public and private decisions about the technologies' desirability and usefulness.

Fuel and Energy Use: California's transportation sector consumes 50 percent of all energy in California. Current trends of increasing travel and greater commuting distances, and the growing popularity of less fuel-efficient vehicles (such as SUVs), indicate California's transportation fuel consumption will increase by approximately 40 percent over the next 20 years.¹⁵ However, projections also indicate that world petroleum production levels will peak and begin to decline by mid-century.¹⁶ Knowing that petroleum supplies will decline, yet not knowing when or how quickly, is a policy dilemma. California must begin transitioning from petroleum as its predominant source of transportation energy to an environmentally and economically sustainable source.

Environmental Impacts: Air quality is often the first environmental impact that comes to mind when discussing transportation. In addition to transportation-related emissions from vehicle fuel combustion and resulting health and greenhouse gas impacts, transportation typically has the following negative effects:

- ❑ Water quality is degraded through storm water run-off from roadways and parking facilities and impermeable surfaces that limit water filtration via soil percolation
- ❑ Vegetation is harmed by direct removal as well as transportation-generated air and water pollutants
- ❑ Wildlife habitat is divided, degraded, or destroyed to provide for transportation
- ❑ Open space, wetlands, and prime agricultural land are consumed directly or indirectly by transportation
- ❑ Communities, individuals, and wildlife are impacted by vehicular noise
- ❑ Urban, suburban, and rural visual quality are degraded directly or indirectly by transportation facilities.

Environmental goals and values pose challenges to the operation and expansion of transportation facilities to meet growing demand. Nearly all major metropolitan areas in California do not attain federal and state air quality standards. Federal funding for transportation projects is limited in

¹⁵ California Energy Outlook 2000, Vol. II Transportation Energy Systems, California Energy Commission, August 2000.

¹⁶ *ibid.*

these areas. Supporting the improvement of air quality may take precedence over many other concerns in regional transportation planning.

Meeting storm water run-off requirements will be a major expense during the period covered by this plan, and beyond. The California Transportation Commission's 1999 *Inventory of Ten-Year Funding Needs for California's Transportation Systems* estimated the cost associated with storm water run-off on the state's highways to be as much as \$6 billion. In May 2001, the State Water Resources Control Board approved Caltrans' statewide Storm Water Management Plan. The California Transportation Commission responded by increasing funds in the State Highway Operation and Protection Program by approximately \$300 million over a five-year period to help address storm water discharge. Additional resources will need to be identified, or redirected, to address this critical issue.

To advance environmental sustainability, transportation providers will need to improve mitigation of environmental impacts, reduce emissions, and impose construction limitations to avoid coastal or floodplain hazards. Additionally, they will need to develop new tools for projecting the consequences, costs, and benefits of new or expanded facilities and alternative strategies for meeting transportation demand, and develop new collaborative partnerships to streamline the environmental review process without compromising the environment.

Increasing Demand for Transportation: Congestion in the transportation system is worsening as demand outstrips the ability to provide additional capacity. Travel demand increases are the result of population growth and more trips per capita. According to the recently completed California Trends and Demographics report, between 2000 and 2025 personal vehicle trips are expected to increase 38%, transit trips 72%, and walk/bike trips 77%.¹⁷

According to the Federal Highway Administration, nearly half of California's urban highways are currently congested.¹⁸ This is 65 percent greater than the national average. On-road vehicle miles traveled per year in California is projected to increase from approximately 307 billion miles in 2000 to 475 billion miles by 2020 – a 55 percent increase. The number of on-road vehicles is projected to reach almost 35 million, up from about 23 million in 2000.¹⁹ (see **FIGURE 3** on the following page)

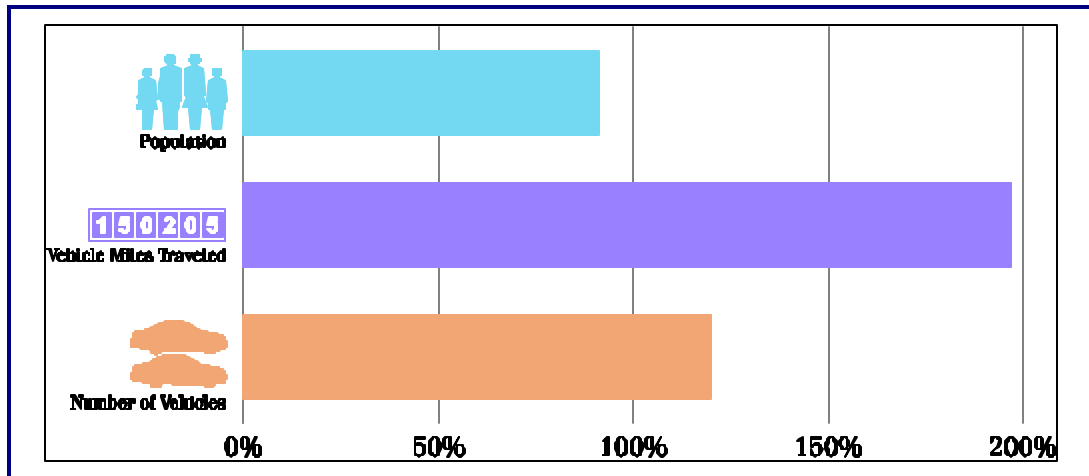
¹⁷ Randall Crane and Abel Valenzuela, UC Los Angeles, and Chris Williamson, Solimar Associates, California Travel Trends and Demographics, 2002.

¹⁸ Federal Highway Administration defines congestion as when an Interstate highway exceeds 13,000 vehicles per-lane-mile daily, or 5,000 vehicles per-lane-mile on principal arteries.

¹⁹ California Department of Transportation, Division of Transportation System Information, Vehicle Stock, Travel and Fuel Forecast, November 2001.

FIGURE 3

Projected Rates of Increase (1990 - 2020)



Roadways are not the only mode experiencing increased demand. Many major metropolitan airports will soon reach capacity. The larger commercial airports in California's urbanized regions are experiencing increasing capacity shortfalls and ground access congestion. The Southern California Association of Governments and the Metropolitan Transportation Commission²⁰ project a significant increase in air passengers. Los Angeles International Airport expects to handle over 85 million passengers in 2010 and San Francisco International expects 46 million. This represents a 67 percent and 16 percent increase respectively in ten years. As demand increases, general aviation aircraft will be increasingly forced from larger commercial airports to surrounding general aviation airports.

Transit also experienced increased demand. Travel on California's urban public transit systems, including bus, rail, and demand-responsive services, increased by 9 percent between 1990 and 1997.²¹ **FIGURE 4** (on the following page) shows the passenger miles traveled by transit in California's major metropolitan areas, and the rate of increase between 1990 and 1997. Passenger Miles Traveled (PMT) is calculated based on total passenger miles of travel provided by California's public transit agencies. For example, a bus carrying 10 passengers, one mile would equal 10 PMT.

Meanwhile, the physical capacity of the system is growing more slowly than in the past for a variety of reasons, including cost, community resistance, and environmental concerns. System operators are improving methods to

²⁰ Southern California Association of Governments represents Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura Counties. The Metropolitan Transportation Commission represents the nine Bay Area Counties of Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, Napa, Solano, and Sonoma.

²¹ California Urban Travel Trends from 1990-1997, The Road Information Program, May 2000.

manage and operate the system to increase throughput. Transportation providers will need to develop new and more integrated approaches for demand management and system operations, as well as expanding transportation facilities to address increasing demand.

Shared Transportation Decision-Making:

Transportation planning and programming in California is a complex process shared among multiple public and private entities. The process is regulated by federal and state statutes, federal and state environmental regulatory agencies, and influenced by organized interest groups and political and public will.

In accordance with state and federal laws, the majority of transportation decisions are made at the regional level. In California, 75 percent of state and federal transportation revenues available for new projects are allocated to regional transportation planning agencies. Most metropolitan regions in California have supplemented state and federal transportation funding with resources generated from local sales tax measures. Funds generated from sales tax measures can be used for roadway and transit projects on or off the state highway system.

The remaining 25 percent of resources available for new projects are reserved for interregional projects selected by Caltrans. This is intended to support the movement of people and goods to, and through, California's metropolitan regions, as well as providing rural access. Large interregional projects in urban areas usually require cooperation and funding from multiple sources to ensure completion.

The CTC is responsible for programming and allocating funds for the construction of highway, passenger rail and transit improvements throughout California. The CTC also advises the Governor on transportation policy.

The state supports three intercity passenger rail routes and contracts with Amtrak to operate the services. Amtrak also operates three long-distance passenger rail services that traverse California. Local and regional entities plan and operate commuter and urban rail services, and the High Speed Rail Authority is charged with planning and developing a California high-speed rail system.

Most rail lines in California are owned and operated by private freight railroad companies, such as Burlington Northern and Santa Fe, and Union Pacific.

Figure 4

Transit Passenger Miles Traveled

	<u>1990 PMT</u>	<u>1997 PMT</u>	<u>Percent</u>
	<u>(in millions)</u>	<u>(in millions)</u>	<u>Increase</u>
Los Angeles	2,103	2,257	7
Riverside-San Bernardino	48	116	142
Sacramento	98	124	26
San Diego	380	445	17
San Francisco-Oakland	2,030	2,051	1
San Jose	188	219	17

Source: California Urban Travel Trends from 1990-1997

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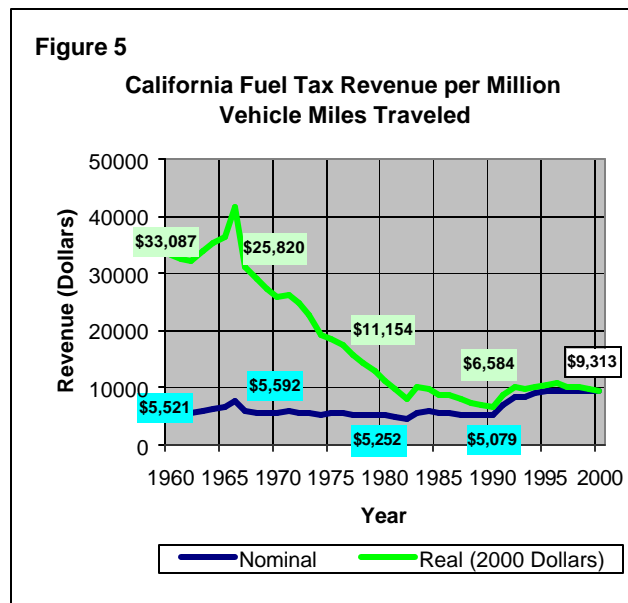
The freight railroads enter into contract with Amtrak and local or regional entities to permit operation of rail passenger services on their lines. The private freight railroad companies provide freight service to industry, air, and seaports.

Air and seaport operators and federal agencies set policy for seaports and airports. Privately owned trucking companies, intercity, local and regional bus companies, taxi services, and private vehicle owners operate on state, regionally, and locally owned and operated roadways.

All of these operators, owners, and decision-makers function with varying degrees of autonomy, making statewide transportation planning and coordination time-consuming and challenging. Transportation planners, providers, and decision-makers will need to find new ways to negotiate, collaborate, and share resources to reach common goals and ensure California's prosperity.

Financing Shortfall and Dilemma: Transportation service demands have increased while there has been a decrease in resources available to meet the demands. The current level of state, local, and federal funds for transportation falls substantially short of what is needed to ensure mobility and facilitate goods movement in the next decade. Much of the shortfall can be attributed to eroding transportation revenues compared to vehicle miles traveled. As **FIGURE 5** (below) indicates, in 2000 inflation-adjusted dollars (Real), California fuel tax revenue per vehicle mile traveled is approximately

36 percent of what drivers paid in 1970.



According to the CTC's *Inventory of Ten-Year Funding Needs for California's Transportation System* released in May 1999, California's total ten-year funding shortfall for transportation exceeds \$100 billion. This amount includes estimated needs for state highway and local roads; bridge rehabilitation; intercity, commuter and urban passenger rail; and bus, bicycle, and pedestrian facilities.

Responding to the considerable funding shortfalls and recognizing the critical role transportation plays in the state's economy, Governor Gray Davis signed Assembly Bill 2928, implementing the Traffic Congestion Relief Plan (TCRP), in July 2000. The TCRP's purpose is to fund projects that will relieve

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congestion, improve goods movement, and connect all state and local modes of transportation. The TCRP provides over \$5 billion in new funds to 141 high-priority projects and another \$1.4 billion to maintain state highways and local streets and roads over seven years (see Appendix VI).

In March 2002, Californians voted overwhelmingly to make the TCRP a permanent program by approving Proposition 42. The fund source for this program is the state portion of sales tax on gasoline sales which will be dedicated to transportation projects after the TCRP provisions terminate in Fiscal Year 2007/08. It is estimated that Proposition 42 will provide an additional \$35 billion for transportation during its first 20 years.

California and other states face a transportation-financing dilemma. The primary source of transportation funds is the state and federal excise tax imposed on each gallon of transportation fuel sold. (See Appendix V for more information on transportation financing.) To the extent California minimizes vehicle miles traveled and increases the overall fleet fuel efficiency, the rate of gasoline and diesel fuel consumption will be reduced. Reducing the number of gallons of fuel sold also reduces the transportation revenues generated. However, the demand for transportation and the need to maintain and operate the system will continue.

Another financing dilemma is approximately 80 percent of transportation funds go to operating, managing, maintaining, and rehabilitating the system. This leaves approximately 20 percent of resources available for increasing system capacity. As the system expands, in the form of transit vehicles, lane miles, right-of-way, etc., the cost of operating, managing, maintaining and eventually rehabilitating the system components also increases. The cost for increased transportation system security will further compound the problem.

GUIDING PRINCIPLES FOR REACHING THE VISION

The overarching principle of the CTP is the “integrated system” concept. Transportation policy- and decision-makers cannot view transportation by individual mode. It must be viewed, planned, and operated as a complete integrated system with complementary modes. Nor can policy- and decision-makers take a narrow geographic approach to transportation. The system must connect effectively between jurisdictions and appear “seamless” to the transportation user. To this end, the CTP was developed with four guiding principles in mind: Collaboration, Leadership, Innovation, and Communication.

COLLABORATION is making a sustained commitment to work with partners and stakeholders to operate and maintain the system and to develop solutions that accomplish a common mission. Collaboration requires a commitment to shared decision-making. Implementing the CTP will require effective management, research and technology, and the participation of

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federal, regional, local, and Indian tribal governments, community-based organizations, the private sector, and residents. The CTP provides an opportunity to promote a dialogue among our diverse population regarding the future of California and its communities.

LEADERSHIP means defining a desired vision of the future, having the courage to work towards the vision, encouraging people and organizations to support the vision, and inspiring them to make it happen. Leadership also means taking risks to test innovative approaches to transportation challenges; making difficult choices; ensuring people understand their choices and associated benefits and consequences; and the trade-offs and limitations. It is the driving force towards change.

INNOVATION is the creativity, ability, and flexibility to develop, test, implement, and replicate new ideas and solutions. Innovation and collaboration are the two values essential to developing and carrying out strategies and actions that result in a better future.

COMMUNICATION is the exchange of information and ideas. Effective communication is a two-way exchange, involving both expressing and receiving ideas and information. Communication is the way to ensure that change happens in the best way possible. The transportation vision cannot be realized without clear and effective communication.

GOALS

The transportation system must provide effective mobility and accessibility. It must be safe and secure and support the state's economic vitality. It must co-exist with and enhance our natural and human environments.

The following goals, while identified and discussed as separate issues, are interdependent. For example, if the system is not well maintained, the level of mobility and safety will decline. Each of the following goals support one or more concepts contained in the vision for California's transportation system:

- 1) ENHANCE PUBLIC SAFETY AND SECURITY** – Providing for the health, safety, and security of its residents is a primary concern of governments at all levels. Ensuring traveler safety must be addressed by all modes of transportation. Prevention strategies, including the integration of new technologies when designing the system's infrastructure, should be incorporated into the planning process and coordinated at the state, regional, and local level to meet the needs of the traveling public.

A safe transportation system helps to ensure optimum movement of people and goods to their destination, on-time and injury-free. Time, and therefore money, is lost when the system is disrupted due to congestion-inducing incidents, such as train derailments or vehicle collisions. Beyond the economic impacts, accidents on our highways, airways, and

waterways can have long-lasting toxic effects on water, plants, and wildlife.

The perception of safety can have a profound impact on the transportation user's sense of security and behavior. The public's response to perceived safety and its economic consequences were demonstrated in the aftermath of the terrorist attacks on September 11, 2001. The security of California's transportation system must be improved to ensure traveler safety, cargo security, and the state's economic prosperity.

- 2) PRESERVE THE TRANSPORTATION SYSTEM** – Rehabilitating and maintaining the state's extensive transportation system will preserve it for future generations. Californians have been investing in this system for over 100 years. The state and national economies, and our quality of life are dependent on the system. Preservation investment needs to be reliable and continuous to ensure the system's viability for future generations, to avoid the higher cost of deferred maintenance, and to realize the useful life of the state's transportation assets. Preserving the system includes maintaining roadways and rail beds, pedestrian walkways, bicycle paths, air and sea-ports, and transit facilities and vehicles.

- 3) IMPROVE MOBILITY AND ACCESSIBILITY** – California's complex network of roadways, seaports, airports, railways, inter-modal facilities, and pipelines

"We already know the results of traffic congestion, air pollution, and un-regulated urban sprawl. We must continue to work hard to weave together the threads of transportation, commerce, health, safety, and the environment to build more livable communities."

JEFF MORALES, DIRECTOR
California Department of
Transportation

is vital to our economic prosperity and quality of life. Projections indicate that by the year 2020, California will be home to over 45 million residents, with 34 million registered vehicles.²² Due to environmental, physical, and fiscal limitations, building new transportation facilities alone cannot provide for the anticipated demand. We must manage the system efficiently, provide viable transportation choices, and increase connectivity among all modes.

California is currently the world's fifth-largest economy. The state's economic growth is directly connected to the system's ability to transport people, goods, and information reliably and efficiently into and throughout the state, as well as to other states and countries. As transport efficiency is improved, transportation and consumer costs are minimized - an important outcome in a competitive environment. If projections prove correct, it is expected that the volume

²² Division of Transportation System Information, California Department of Transportation.

of goods moving by all modes within and through California will double by 2020.²³

Providing transportation choices will help balance the system and reduce congestion and environmental impacts. Enhancing and expanding modal choices will also provide options for those who can drive and improve access for those who cannot or choose not to drive. With this in mind, and after considerable consultation with regional transportation planning agencies and public input, the TCRP earmarks half the program's resources to transit enhancements and capacity improvements, including ferry projects.

- 4) MAXIMIZE EFFICIENT USE OF RESOURCES** – Californians in the public and private sector must protect the state's precious and finite resources when planning and implementing transportation projects. These resources include air, water, and land, our rich and diverse plant and animal life and habitat, and historical and cultural assets. As this plan looks to our future transportation needs, it must also consider the cumulative impacts of past transportation-related activities.

Transportation in California remains vulnerable to oil supply disruptions and price spikes that can play havoc with consumer pocketbooks and the state's economy. Energy supply and demand projections indicate that the state's vulnerability will escalate over the next 20 years.

Additionally, transportation-related emissions are California's largest source of air pollution. They are associated with fuel consumption and directly related to vehicle use. Currently, more than 90 percent of the state's population is exposed to unhealthful air.

In the long term, the costs of transportation may include environmental damage that affects future generations in the form of global climate change. In the near term, the growing demand for transportation energy will result in price spikes and long-term supply considerations increasing business and production costs, and the cost of transportation to system users and providers. Reducing fossil fuel consumption is critical to California's environmental and economic vitality.

- 5) REFLECT COMMUNITY AND ENVIRONMENTAL VALUES** – Our growing population and travel demands will place pressure on our land, natural resources, quality of life, schools, infrastructure, and transportation options. While this growth will have statewide impacts, transportation planning and solutions to address growth must be sensitive to their local context. We must find solutions that balance and integrate community, aesthetic, and environmental values with transportation safety and performance.

²³ Global Gateways Development Program, California Department of Transportation, January 2002.

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California communities contain diverse populations with differing transportation needs and travel patterns. Meeting the basic transportation needs of all the state's communities, in geographically dissimilar regions of the state, is critical to maintaining a desirable quality of life. Community, cultural, and historic values must be considered when assessing the transportation impacts to social and environmental resources – including housing, neighborhoods, historic and agricultural lands, downtown districts, and natural habitats. While natural, cultural, and biological resources are essential for the environmental and economic health of the state, communities must contain a balance of viable transportation, housing, and business resources to support and facilitate economic opportunities.

TRANSPORTATION POLICIES AND STRATEGIES

The following seven policies are developed to support the goals identified above and to respond to concerns expressed by the public and stakeholders, while being mindful of future trends and challenges. The policies and strategies may support more than one goal.

Policy 1: Expand opportunities for early and ongoing collaboration in transportation planning and decision-making.

Policy 2: Maintain, manage, and preserve a safe and secure transportation system.

Policy 3: Develop, manage, and operate an efficient, inter-connected, and intermodal transportation system.

Policy 4: Manage growth and conserve resources.

Policy 5: Enhance system capacity and provide viable transportation choices.

Policy 6: Provide additional and more flexible transportation financing.

Policy 7: Support research to advance mobility and accessibility.

The policies are designed to preserve the transportation system and provide mobility and accessibility for California's growing population, while enhancing the state's environment, economy, and social equity. The following pages will present an explanation and supporting strategies for each policy.

Policy 1: Expand opportunities for early and ongoing collaboration in transportation planning and decision-making.

During the public participation workshops held throughout the state, participants were asked to prioritize strategies to address our future transportation needs. Public participation, information sharing, and interagency coordination were among the top strategies identified at every location. Participants wanted more information on why decisions are made, the benefits and costs of transportation solutions, and the anticipated environmental and community impacts.

They also wanted opportunities to participate in identifying problems, exploring solutions, and in the decision-making process. An effective public involvement process provides for an open exchange of ideas and information, leading to a better understanding of the needs and issues by all

TRI-AGENCY PARTNERSHIP

In February 2001, three state agencies (Business, Transportation and Housing Agency, California Environmental Protection Agency, and the Resources Agency) entered into a concerted, cooperative, and collaborative partnership to ensure the timely planning and implementation of transportation projects that protect or restore the State's environment.

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parties. It also provides those persons traditionally underserved by existing transportation systems an opportunity to participate in the decision-making process.

STRATEGIES:

- ❑ Consult and coordinate with local, regional, and tribal governments during development of their general plans and other long-term planning efforts.
- ❑ Involve businesses, communities, including community-based organizations, and institutions early in the transportation planning and decision-making process.
 - ❖ Develop a collaborative approach to resolve transportation issues and to develop performance criteria and indicators.
 - ❖ Develop, implement, and advertise a web-based public participation system, consisting of informational and educational materials, online surveys and focus groups, and online voting to enhance decision-making.
 - ❖ Design and implement public participation strategies to include those traditionally underrepresented in the public planning and decision-making process.
 - ❖ Develop Geographic Information Systems that spatially illustrate projects and affected land (neighborhoods, etc.), interactive visual simulations, and other techniques to effectively convey the information to the public.
- ❑ Assess and provide information regarding the full benefits and costs of transportation by mode, including direct and indirect costs, societal, environmental, governmental, and personal costs.
 - ❖ Evaluate and provide cumulative environmental costs, including mitigation costs such as habitat conservation programs, and land-use impacts on a programmatic basis.
 - ❖ Analyze and provide life cycle, social, health, and environmental costs for reasonable alternatives, including modal alternatives.

Policy 2: Maintain, manage, and preserve a safe and secure transportation system.

Preserving the existing multimodal transportation system and increasing system safety is a primary concern of transportation providers and users. Improving transportation safety includes improving driver behavior as well as the design and operation of vehicles and infrastructure, and providing for the secure movement of goods and information.

California's transportation system includes over 168,000 miles of maintained public roads. According to the 2000 update to the Ten-Year State Highway Operation and Protection Plan, approximately one-third of the state highway

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system needs pavement work and more than half the bridges are over 30 years old, and, while safe, are in need of costly rehabilitation. According to the Commission on Building for the 21st Century's preliminary findings, 60 percent of California's county roads are in poor condition.

However, on the state and local levels, there are insufficient resources to maintain and operate the roadways, bicycle, pedestrian and transit facilities, and general aviation airports. Even with the new resources from the TCRP and Proposition 42, there will not be enough to maintain the aging system.

Transportation policy-makers and providers must identify, analyze, and implement additional transportation fees and financing instruments to maintain our transportation infrastructure. The current system must receive priority for funding to preserve the system's safety and the public's investment.

STRATEGIES:

- ❑ Continue to place a high priority on preserving the transportation system and protecting the public's multi-billion dollar investment.
- ❑ Use technology, innovative techniques, and new materials to enhance the life of the transportation system, provide safer work sites, enhance productivity, and reduce traveler inconvenience.
 - ❖ Empower travelers with real-time information in order to avoid construction and maintenance delays.
 - ❖ Support research and development of improved construction and maintenance techniques and materials.
- ❑ Increase private sector participation and coordinate transportation maintenance and rehabilitation projects with other transportation agencies and public utility projects to minimize costs and traveler disruption.
- ❑ Reduce the response time to motor vehicle, bicycle and pedestrian incidents, and the rate of fatalities, injuries, and property damage on the transportation system.
 - ❖ Deploy infrastructure-based detection and warning safety systems, as appropriate (for example, fog, dust, ice, and curve speed warning systems).
 - ❖ Provide incentives to vehicle manufacturers to deploy vehicle-based safety systems, such as mayday, vision enhancement, and collision warning systems.
- ❑ Increase patrols to enforce speed restrictions, minimize aggressive driver behavior and driving under the influence of alcohol or other drugs, and increase security at airports, transit facilities, and on public transit vehicles.

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- ❑ Develop a transportation system security plan, including risk assessment, monitoring methods, pre- and post-incident preparedness, response and recovery, crisis management and evacuation plans, and redundant transportation alternatives.
 - ❖ Analyze best practices from countries that have experienced and responded to security threats.
 - ❖ Evaluate design of transportation facilities for security risks.
 - ❖ Develop security guidelines for all modes and facilities, including goods movement facilities.
 - ❖ Coordinate with emergency response agencies, including law enforcement, medical services, and the media.
 - ❖ Train personnel in emergency response procedures.

Policy 3: Develop, manage, and operate an efficient, inter-connected, and intermodal transportation system.

People, goods, services, and information must travel by the most efficient means possible to foster economic prosperity. Each mode must connect with others to allow convenient and efficient movement. When asked, the public said they want a transportation system in which they can easily move between modes, jurisdictions, and operators. They want transit fare structures and schedules that are complementary, consistent, convenient, and easily understood. The public also expressed concerns regarding system capacity now and, considering the projected growth in demand, in the future.

The following strategies are designed to lead to a transportation system that can incorporate changing technology, manage growth, and balance system demand.

STRATEGIES:

- ❑ Improve the operating efficiency, system management, and connectivity of the state's transportation system by using advanced transportation applications.
 - ❖ Integrate services and technologies statewide so that transportation services are seamless, consumer devices work everywhere, and market size reaches levels needed for low-cost mass production.
 - ❖ The state should lead the way by promoting and negotiating cross-jurisdictional coordination to bring about improved efficiencies and connectivity, including at ports-of-entry, for the movement of people, goods, and information.
 - ❖ Establish a statewide coalition to develop strategies ensuring full consideration of goods movement projects in federal, state, and regional transportation planning and programming.

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- ❑ Maximize transportation investments through a coordinated approach to capacity and operational improvements, such as providing dedicated bus service on HOV lanes.
- ❑ Improve capabilities for measuring transportation system performance.
 - ❖ Accelerate deployment of data collection technologies and communications.
 - ❖ Improve analytical methods for assessing performance data.
- ❑ Empower travelers to better manage their individual trips, such as:
 - ❖ Deploying a statewide traveler information web portal that effectively integrates local, regional, and interregional public services with private, for-profit services.
 - ❖ Deploying a statewide “511” traveler information telephone service that effectively integrates existing and planned telephone-based systems.
 - ❖ Collaborating with private sector and transportation providers to develop and implement a statewide electronic payment system for transit fares, toll collection, parking fees, bicycle lockers, etc.
- ❑ Support research and development of advanced transportation systems and deployment of solutions, as they are proven effective.

Policy 4: Manage growth and conserve resources.

During the public participation program, concerns were commonly expressed throughout the state related to our land-use practices, the lack of comprehensive, integrated transportation/land-use planning, resource consumption, and a general concern for the current and future quality of life in California. Additionally, the Public Policy Institute of California’s *Special Survey on Land Use* conducted in November 2001 indicated that Californians are very concerned about growth and land-use and its resulting traffic congestion.

Perhaps due to the well-publicized results of Census 2000, Californians are aware of the projected population growth and the challenges that growth will bring. They are concerned about how we will meet the transportation challenges, as well as other infrastructure and social needs, while protecting our environment, health, and quality of life.

SAN JOAQUIN MULTI-SPECIES HABITAT CONSERVATION AND OPEN SPACE PLAN

This innovative plan required consensus among federal, state, and local agencies, business, development, agriculture, and environmental interests. The plan protects 97 endangered and threatened species and open space in San Joaquin County. The plan provides biological analysis, species identification, and a mitigation plan, thus facilitating the permitting process.

<http://www.sjcog.org/habitat/Titlepage.htm>

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Growth will happen. How we plan, prepare, and manage growth will determine if it adds to California's vitality and economy, or negatively influences our quality of life. The following strategies are recommended to minimize land consumption and vehicle miles traveled, and the resulting need for roadways and parking lots. The objectives are to reduce impacts on sensitive wildlife habitat, vegetation, and wetlands, reduce pavement storm water run-off, reduce tailpipe emissions, and preserve open space and agricultural lands.

STRATEGIES:

- ❑ Develop or amend transportation-planning tools to include land-use impacts, demand management, and modal alternative analysis.
- ❑ Provide incentives to promote sustainable land-use decisions that integrate land use, housing, and transportation through General Plans, regional transportation plans, and interregional cooperation.
 - ❖ Strategically increase densities and designs that facilitate effective transit service, including transit-oriented development within major transit corridors, and the ability to conveniently walk to destinations.
 - ❖ Provide information, technical assistance, and best practices on transit-oriented development.
 - ❖ Facilitate the sale of state-owned "excess" or underutilized land near major transit stations for transit-oriented development.
 - ❖ Encourage localities to foster "smart growth" development in areas where transportation infrastructure can readily support it.
 - ❖ Encourage efficient land-use through clean up and re-use of contaminated lands (brownfields).
 - ❖ Encourage lending institutions to offer Location Efficient Mortgages Program to promote housing near transit.
 - ❖ Promote the revision of zoning ordinances to provide for mixed-use development.
- ❑ Incorporate community values and support context-sensitive solutions for all transportation facilities and infrastructure.
- ❑ Promote use of technology to increase accessibility and reduce need for physical travel.

MARE ISLAND ACCORD

In July 2000, the U.S. Environmental Protection Agency, the Federal Highway Administration and the California Department of Transportation signed a cooperative partnership agreement known as the Mare Island Accord. The Accord contains several provisions to improve communication, and to address environmental issues early in transportation planning. The purpose is to improve project delivery times and address environmental issues at the earliest stages.

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- ❑ Investigate reforms to the local fiscal/land-use relationship to provide incentives for communities to make better long-term land-use decisions.
 - ❖ Strengthen the link between land-use and transportation planning.
 - ❖ Options include exchanging state-share property tax for local-share sales tax.
- ❑ Provide incentives for collaborative, integrated regional and sub-regional planning initiatives linked to sustainable development criteria and State General Plan guidelines.
 - ❖ Encourage facility and revenue sharing; collaborative approaches to assessing housing and employment needs and reduce fiscal competition between cities and counties.

Policy 5: Enhance system capacity and provide viable transportation choices.

It is clear that California will need to increase transportation system capacity to help provide for the increased demand resulting from the projected population growth and changing travel behavior. Indeed, if transportation providers do not increase system capacity, the economic vitality, individual opportunity, and quality of life that make California so attractive will be diminished. The question is how to best increase capacity with limited transportation resources.

There are numerous ways to increase transportation capacity or, alternately, reduce demand. Developing new and expanding existing facilities, and improving operational characteristics and system management practices are key strategies to accommodating increased demand.

Providing viable transportation options is another way to enhance California's mobility. Communities designed to accommodate safe, convenient transportation alternatives will result in more transportation choices for all segments of our changing society, reduced tailpipe emissions, and mitigate demand on our roadways. Enhancing interregional transportation alternatives linking communities and national and international transportation facilities will increase the economic viability of smaller urban and rural communities. Additionally, providing viable and affordable transportation alternatives will result in greater accessibility to those who cannot or choose not to drive.

CARLINK

CarLink is an innovative car sharing transportation option for commuters in the Bay Area. CarLink, a public/private partnership, links commuters to a fleet of ultra-low-emission vehicles for both home-based and work-based users. CarLink provides the subscriber dedicated parking, vehicle maintenance, fuel, and insurance. CarLink cuts air pollution and reduces congestion in heavily traveled corridors.

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Providing transportation alternatives extends to the use of alternative fuel vehicles. Governmental agencies at all levels are currently playing a crucial role in expanding the market share of alternative fuel vehicles by “greening” their fleets. We also need to consider the state’s alternative fuel infrastructure needs, customer information for fueling facilities in California and in neighboring states, and marketing the advantages of owning and operating alternative fuel vehicles.

STRATEGIES:

- ❑ Establish methods for evaluating multimodal levels of service in support of an integrated multimodal transportation system.
- ❑ Evaluate pilot projects such as CarLink to determine effectiveness, identify winning attributes, and deploy on a wider basis as appropriate.
 - ❖ Share best practices and guidance with other transportation entities.
 - ❖ Gain insight and guidance from other entities regarding solutions to common problems.
- ❑ Improve and expand roadway, rail, bus, transit, and air service infrastructure, reliability, and connectivity.
 - ❖ Redesign and modernize interchanges to reduce or eliminate bottlenecks or restraints to smooth traffic flow, and reflect current traffic-flow patterns.
 - ❖ Expand dedicated guideway, bus rapid transit service and facilities, smart shuttles and shared car programs such as CarLink where proven effective.
 - ❖ Integrate and interconnect transit service among transit providers and with other modes, and collaborate with private transportation providers to improve and coordinate service.
 - ❖ Improve multimodal ground access to airports, including intercity bus service connecting small urban and rural communities to passenger air service.
 - ❖ Provide state leadership, in cooperation with local, regional, and federal agencies and tribal governments to develop an efficient cargo and passenger aviation system, and mitigate impacts.
 - ❖ Deploy advanced transportation systems to improve safety, traveler information, coordinate service schedules, and fare purchase.

BUS RAPID TRANSIT

The bus rapid transit system under development in Los Angeles will operate on exclusive right of way, use “smart card” passes, low floors and wide doors for fast passenger loading, station displays showing when the next bus will arrive, and 7-10 minutes headways during peak hours. It will provide a high level of transit service at a much lower infrastructure cost.

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- ❖ Continue incremental improvements to the state's intercity rail system and passenger services, while preserving options for a potential high-speed rail network.
- ❖ Incorporate safe pedestrian and bicycle facilities in roadway capacity improvement and rehabilitation projects.
- ❑ Provide greater access to information, products, and services without the need for physical travel.
 - ❖ Increase use of telecommuting, e-commerce, and e-government services.
- ❑ Expand market share of cleaner vehicles and supporting fuel infrastructure.
 - ❖ Expand use of clean fuel transit vehicles.
 - ❖ Encourage public entities to continue investing in alternative fuel vehicles to increase market share and encourage increased production.
- ❑ Continue collaborating with California Energy Commission, California Air Resources Board, and Technology, Trade and Commerce Agency to research and develop strategies to reduce demand for petroleum fuels and increase transportation energy efficiency.
 - ❖ Research and develop alternative fuels and develop a plan for deploying appropriate alternative fuel infrastructure.
 - ❖ Collaborate on a marketing program to provide information on alternative fuel vehicles, including the location of fueling facilities.

SACRAMENTO EMERGENCY CLEAN AIR & TRANSPORTATION

SECAT was launched in November 2000 to reduce emissions from heavy-duty diesel vehicles three-tons per day by 2005. The program makes \$70 million available for truck operator-owners in the Sacramento area to replace existing engines with new low-emission diesel engines, buy newer low-emission vehicles, or use cleaner fuels.

Policy 6: Provide additional and more flexible transportation financing.

The state's economic prosperity and quality of life depends on an efficient transportation system. However, funding shortfalls for transportation challenge the ability of transportation providers, operators, and planners to provide for the current and projected mobility and access needs of the state. The shortfalls affect capital projects as well as operations and maintenance of all system elements.

The transportation system must be managed so that steps are taken to ease the demands and maximize efficiency. For example, reducing peak period travel, improving the traffic flow and encouraging the use of transit, bicycling, and walking can help reduce demand on the road system. In ports, greater efficiency can be achieved by extending hours of operation.

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Good management practices and stable and flexible revenue streams are needed to meet the challenges facing the state's transportation system and future demand. In the future, strategically applied user fees may be an important element of urban freeway demand management. However, the benefits, consequences, and equity issues associated with a user-based fee structure must be fully understood before implementation.

STRATEGIES:

- ❑ Evaluate past transportation financing initiatives, compile current regional transportation plan financial forecasts, and undertake a long-term projection of the Fund Estimate to provide decision-makers with a better understanding of transportation financing and potential changes.
 - ❖ Fully explore the implications and consequences of user-based and traditional financing mechanisms.
- ❑ Increase private sector investment in transportation.
 - ❖ Implement a process to monitor and incorporate private sector mobility services and investments within transportation planning and programming.
 - ❖ Help to make private instruments, such as the Location Efficient Mortgage Program, more widely available.
- ❑ Support the following Transportation Equity Act for the 21st Century reauthorization strategies:
 - ❖ Ensure that California receives an increased share of highway funding based on its contributions to the Highway Trust Fund and preeminent role in the national economy.
 - ❖ Remove barriers to funding projects and programs that improve efficient operation of the existing transportation system.
 - ❖ Promote a stronger commitment of resources to public/private partnerships.
 - ❖ Advocate for flexibility to use federal funds to address highway safety and congestion problems caused by goods movement-related congestion.
 - ❖ Provide for increased program capacity to support the safe and efficient movement of goods in corridors that are crucial to national

AB 1012/STATUTES OF 1999

The primary intent of AB 1012 is to use State and federal funds more efficiently. Before AB 1012, local agencies were only obligating 87% of their federal funds. Since AB 1012, they have obligated approximately 130% of applicable federal funds.

AB 1012 also facilitates project development by adding a steady flow of projects in addition to those traditionally programmed in the State Transportation Improvement Program (STIP). The 2000 STIP included 37 projects and the 2002 STIP includes 48 projects advanced due to AB 1012 provisions.

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economic security and vitality, and provide for the mitigation of their congestion and environmental effects.

- ❑ Increase flexibility in jet fuel tax, airport, and passenger facility charge revenues for use on projects such as cargo and ground access and security needs.
- ❑ Review the State Transportation Improvement Program funding split to best meet statewide transportation goals.
- ❑ Support a constitutional amendment to lower the vote threshold to 55 percent for local revenue initiatives to support local transportation priorities, linked to integrated community and regional planning.

Policy 7: Support research to advance mobility and accessibility.

California has long been viewed as a leader in research and technological innovation. The state is home to many of the world's leading universities and university-based transportation centers. University transportation centers provide the energy and expertise needed to explore new ideas, materials, and methods for advancing California's mobility and accessibility.

In the past, the state's aerospace and defense industry sectors spurred tremendous economic growth. Today, Silicon Valley pushes forward the boundaries of computer research and technology, making California the nexus of the Information Age. Since research and technology drive much of California's economic growth and resulting transportation demand, it is only fitting that we turn to these industries to help improve the efficiency of our transportation system.

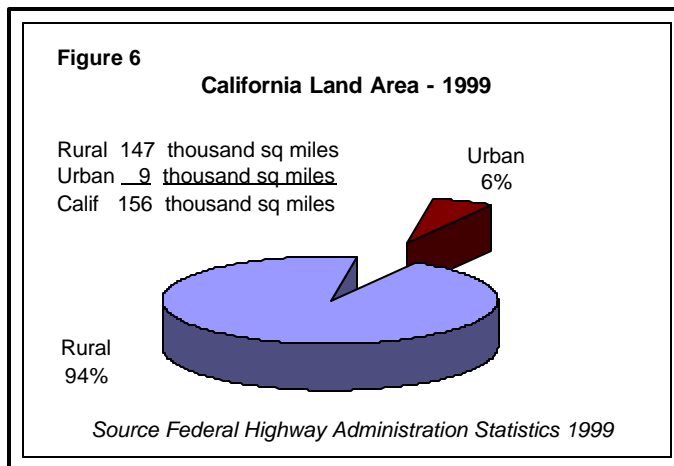
Areas of research supporting the goals identified in the CTP include:

- ❑ Test geospatial, digital, and other advanced imaging systems to evaluate environmental and social data related to infrastructure projects, and to minimize project costs.
- ❑ Develop new materials adding to the life and performance of the transportation system.
- ❑ Research methods and technologies to better operate, manage, and maintain the transportation system, and improve system safety and security.
- ❑ Research successful models in other states and countries and determine their value if implemented in California. Explore alternatives, opportunities, and challenges for new ideas and solutions.
- ❑ Collaborate with federal and state agencies, universities, and other states to explore alternative fuels and fuel infrastructure.

RURAL ISSUES

Rural issues, while as acute as those in urban areas, have very different characteristics. With only eight percent of California's population, rural areas comprise 94 percent of the land area (see **FIGURE 6** below). Providing transportation services to a sparsely and widely distributed population presents special transportation challenges that must be considered when planning for a balanced, interconnected system.

Rural transportation issues may vary depending on the area's economic base, topography, or proximity to urban areas and popular destinations. There are, however, many areas of common need.



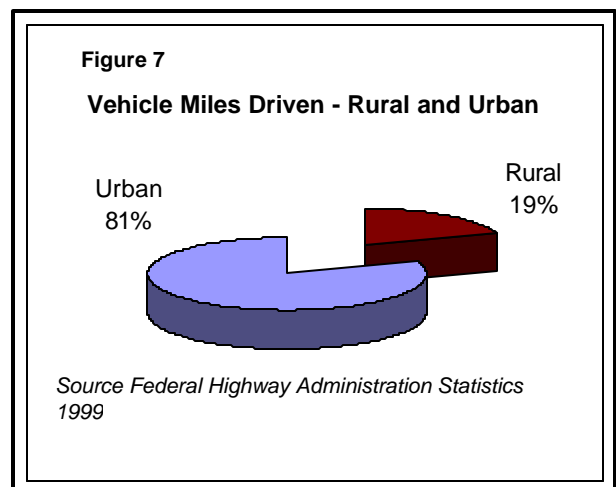
Integrity of the existing road system is a significant concern in rural areas. With approximately 80 percent of the road miles located in rural areas, the proportion of road miles to population creates a far larger responsibility, without the economic means to address it. Weather issues exacerbate

road condition problems, particularly where flooding, landslides, and snow removal can quickly jeopardize pavement integrity.

California's economy relies on the efficient movement of interregional commercial trucking. While rural areas might experience substantial goods movement traffic, and associated air quality effects, they may receive inadequate resources to address the impacts of that traffic.

For more than 50 consecutive years, California has been the number one food and agricultural producer in the nation. The state's agricultural output is nearly \$25 billion per year. This makes truck access of particular importance in bringing food and timber to the world. These large trucks take a substantial toll on the local road systems that feed into the state highways, not only in traffic volumes, but also in impacts to pavement conditions.

California's travel and tourism



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industry generated an estimated \$75.4 billion, or 6 percent of the Gross State Product, and supported over 1.1 million jobs in 2000. Destinations in rural areas are major attractors for state, national, and international travelers. For example, Yosemite, Sequoia, Joshua Tree, Cabrillo, and Death Valley National Parks, Point Reyes National Seashore, and Whiskeytown-Shasta-Trinity National Recreation Area attracted nearly 11 million visitors in fiscal year 2000/2001.²⁴ While rural tourism, and consequently rural economies, is dependent on a well-maintained and reliable roadway system, the roadways are inadequate to serve the demand.

COATS PROJECT

The California-Oregon Advanced Transportation Systems Project is a bi-state, multi-jurisdictional partnership designed to utilize advanced transportation technologies to improve safety and mobility in northern California and southern Oregon. To date, the Project has resulted in coordinated traveler information system on Interstate 5 Siskiyou Pass.

Safety is another significant concern in rural areas. Nationally, over 58 percent of total vehicular fatalities occur in rural areas. The fatality rate per 100 million vehicle miles traveled is more than twice that of urban areas. The higher fatality rate could be attributed to several factors including rugged terrain, shortened sightlines, unforgiving roadways, faster speeds, alcohol, longer response time to the accident, and distance to medical treatment centers.

For some rural residents, transit service is the only means of transportation. Rural entities are often challenged to provide transit and paratransit services to rural customers sparsely distributed over considerable distances. Regional and intercity bus service can be difficult to provide due to low demand, fare box return requirements, and limited resources for operating and maintaining the system. Lack of regional and intercity transportation alternatives reduce the level of independence and opportunities available to rural residents who cannot or choose not to drive.

Rural area airports provide vital access for medical emergencies, and fire fighting and agricultural operations. These airports also provide links to larger urban airports for passenger and air cargo service. Many rural airport runways need to be extended to accommodate larger aircraft.

Rural areas do not have the communication infrastructure that urban areas have. Lack of wireless communication directly affects safety and increases information and advanced transportation systems infrastructure deployment costs.

Transportation plays a crucial role in the sustainable development of rural areas and communities. Pedestrian-oriented main streets in the historical rural downtowns of California have served as examples for improving urban environments. These rural main streets should continue to reflect the

²⁴ "Tourism and the State's Economy", California Office of Tourism.

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community values and character while enhancing the rural economy by facilitating goods movement and access to goods, services, and jobs.

While many of the strategies discussed in the previous section are applicable to rural needs, the following strategies address specific rural issues.

STRATEGIES:

- ❑ Ensure rural areas have adequate funds to provide for the operation, maintenance, and rehabilitation of the rural and interregional transportation system.
 - ❖ Provide for roadway safety improvements and efficiencies.
 - ❖ Funding must be flexible to provide for fund-matching opportunities with other programs.
 - ❖ Consider interregional traffic, including goods movement and tourism, and weather impacts when allocating resources to rural entities.
 - ❖ Ensure critical transportation facilities, such as general aviation, are adequately funded to provide lifeline services.
 - ❖ Upgrade communication to enable deployment of advanced transportation systems to improve safety, incidence response, and traveler information, including emergency response entities in the early planning stages.
- ❑ Advocate coordinated public transportation services with social service agencies to optimize resources and services.
 - ❖ Consult with tribal governments to coordinate improved public transportation access to and through tribal lands.
 - ❖ Initiate effort with full participation of federal, state, regional, and local governments to explore funding options and opportunities and to address potential barriers.
 - ❖ Identify best practices, including advanced public transportation technologies, to improve and coordinate services.
- ❑ Consider the “main street” characteristics of transportation corridors and incorporate community values and context-sensitive solutions.
- ❑ Explore alternatives to moving goods through rural areas to mitigate impacts on infrastructure and air quality.

PERFORMANCE MEASURES

Performance measures serve to indicate progress toward identified goals; to inform decision-making on transportation issues and opportunities; to provide a point of departure for policy and program analysis; to evaluate system conditions and strategies; to enable monitoring and problem identification; and to contribute to the integration of economic, social, and environmental factors during the planning and early decision-making processes. Performance measures consist of a set of objective, measurable criteria used to evaluate the performance of the transportation system and to gauge if and to what degree our vision and goals are being achieved.

The Business, Transportation and Housing Agency initiated a statewide effort to develop indicators and measures to assess the performance of California's multi-modal transportation system, and to support informed transportation decisions by public officials, operators, service providers, and system users. This cooperative effort resulted in the 1998 "Transportation System Performance Measures Report" that provided a blueprint for developing performance measures, defined desired outcomes, and identified mode-neutral candidate measures or indicators.

The system performance measures and indicators identified in the 1998 report, and subsequent ongoing work, are supported by the vision, goals, and policies contained in the CTP. The relationship between CTP goals and System Performance Measures is listed in **FIGURE 8** on the next page.

Developing performance measures and indicators to assess performance is standard private sector business practice. Caltrans, working with the public and private sector transportation providers, developed the above performance measures. As the table indicates, the measures are at differing stages of implementation ranging from "testing ongoing" to "included in some Regional Transportation Plans." Full implementation should occur within the next two to three iterations of the Regional Transportation Plans. Challenges for full implementation of performance measurement of the next couple of years include:

- ❑ Integrating the performance measures into ongoing planning and programming activities and processes.
- ❑ Improving the availability and accessibility of data required to systematically measure, forecast, and evaluate transportation systems and decisions.

FIGURE 8

**Relationship Between CTP Vision & Goals
and System Performance Measures**

CTP Vision/Goal	System Performance Measure	Indicator	Status
Enhance Public Safety and Security	Safety and Security	<ul style="list-style-type: none"> • Accident Rates • Crime Rates • Security Levels 	<ul style="list-style-type: none"> • Fully tested • Included in some Regional Transportation Plans
Preserve the Transportation System	System Preservation	<ul style="list-style-type: none"> • Asset Condition 	<ul style="list-style-type: none"> • Fully tested • Included in some Regional Transportation Plans
Improve Mobility and Accessibility	Mobility Accessibility Reliability	<ul style="list-style-type: none"> • Travel Time Delay • Access to Desired Locations • Access to System • Variability of travel time (expected vs. actual travel time) 	<ul style="list-style-type: none"> • Fully tested • Included in some Regional Transportation Plans • Fully tested for aeronautics, highways and transit
Maximize Efficient Use of Resources	Sustainability (Environmental related)	<ul style="list-style-type: none"> • Fuel usage per person mile • Fuel usage per ton moved 	<ul style="list-style-type: none"> • Testing ongoing
Reflect Community and Environmental Values	Sustainability (Social Equity related) Environmental Quality	<ul style="list-style-type: none"> • Emissions • Noise Levels • Species, Wetlands, etc 	<ul style="list-style-type: none"> • Fully tested • Included in some Regional Transportation Plans
	Customer Satisfaction	<ul style="list-style-type: none"> • Responses from Customer Surveys 	<ul style="list-style-type: none"> • Department External Survey: First survey validated selected Performance Measures. Second survey under development.

Caltrans and its partners recognize the benefits of developing performance measures implementation: making better decisions, communicating clearly with the public and other transportation customers, and improving accountability. Caltrans continues making advances on these challenges through initiatives designed to improve data quality and access, and enhance partnerships with environmental and resources decision-makers. Integration of performance measures into long-range planning is critical to the continued success of performance measures implementation. As we endeavor to develop a more balanced and sustainable system, the evaluation of transportation objectives and related performance measures will continue.

CALIFORNIA TRANSPORTATION ACTION PLAN DEVELOPMENT

Upon approval of the CTP, Caltrans will initiate development of an Action Plan that will present specific steps to implement the strategies proposed in this document. Building on our mutual commitments and capitalizing on our successes, the Action Plan will identify measurable objectives, roles and responsibilities, timelines, estimated costs, and targeted outcomes. Caltrans will also develop a method to monitor progress toward the goals, including a reporting system and schedule.

The CTP is a plan for all of California. Developing the implementing Action Plan will require considerable coordination and collaboration with regional transportation planning agencies, local and regional officials, other governmental entities, tribal governments, community-based organizations, business, communities, and system users. The participants in this effort will vary depending on the strategy being addressed.

Objectives and priorities may vary based on regional goals. It will be the state's responsibility to help sort through these varying goals and ensure the overall, interregional state transportation goals are addressed and cross-jurisdictional issues are considered.

The Action Plan will be developed in modules. Some of the strategies are continuous efforts, some will require legislation, and others multi-organizational collaboration. We will focus first on the most critical issues that need to be addressed immediately. We will complete the entire Action Plan within one year of the Governor's approval of the CTP, but will implement elements of the Plan as they are completed.

The Action Plan must be tied to resources. This document identifies several transportation financing options. The options must be evaluated for their effectiveness and their consequences. To this end, Caltrans is initiating a Financing Study that will forecast transportation revenues through 2025 based on current funding structures. The study will also explore the revenue and cost impacts of various scenarios and strategies identified in this document.